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Application No. 09/890,214
Amendment dated January 25, 2007
Reply to Office Action of September 25, 2006

Docket No.: 0941-1693PUS1

AMENDMENTS TO THE CLAIMS

1-2. (Cancelled)

3. (Currently Amended) ~~A method according to Claim 1, characterized in that~~An interpolation method for a video signal, in which at least two line-memories are used, the line-memories being applied with an input digital video signal, and in which the line-memories are subjected to controls on their writing and reading so that a video signal subjected to vertical interpolation is generated from reading outputs of the line-memories, wherein

for the controls on writing and reading, any of the line-memories are circularly selected and a sample sequence of the input digital video signal is sequentially written into the selected line-memory at a sample rate of the sample sequence, and at the same time the samples of the written sequence are sequentially read out at a substantially constant rate which is in accordance with a desired vertical expansion ratio and which is higher than the sample rate, wherein, when one of the line-memories is in a writing operation, the other one of the line-memories is subjected to a repeatedly reading control; and

wherein the constant rate corresponds to a dot-frequency of image to be displayed.

4. (Currently Amended) ~~A method according to claim 1, characterized in that~~An interpolation method for a video signal, in which at least two line-memories are used, the line-memories being applied with an input digital video signal, and in which the line-memories are subjected to controls on their writing and reading so that a video signal subjected to vertical interpolation is generated from reading outputs of the line-memories, wherein

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for the controls on writing and reading, any of the line-memories are circularly selected and a sample sequence of the input digital video signal is sequentially written into the selected line-memory at a sample rate of the sample sequence, and at the same time the samples of the written sequence are sequentially read out at a substantially constant rate which is in accordance with a desired vertical expansion ratio and which is higher than the sample rate, wherein, when one of the line-memories is in a writing operation, the other one of the line-memories is subjected to a repeatedly reading control; and

wherein a line-memory to be in a reading mode is designated based on a synchronization signal having a frequency more than by a factor of the vertical expansion ratio as high as a horizontal synchronization frequency of the input digital video signal.

5. (Original) An interpolation method for a video signal, in which at least one line-memory is used, the line-memory being applied with an input digital video signal, and in which the line-memory is subjected to controlling including writing and reading thereof so that a video signal subjected to horizontal interpolation is generated from a reading-output of the line-memory, wherein

the signal subjected to horizontal interpolation is applied to a serial input of a shift-register for applying pixel information signals associated respectively with column electrodes each extending in a vertical direction of a display area in displaying means,

a shift-clock signal is applied to the shift-register, the shift-clock signal having a predetermined frequency for shifting data latched in the shift-register,

for the controlling:

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a sequence of samples of the input digital video signal is written into the line-memory while the samples of the written sequence are sequentially read out in response to a read-clock signal; and

a frequency of the read-clock signal is set to have a constant frequency which is lower than the frequency of the shift-clock signal and which is in accordance with a desired horizontal expansion ratio.

6. (Currently Amended) A method according to claim 5, ~~characterized in that wherein~~ the read-clock signal is generated based on the shift-clock signal.

7. (Currently Amended) A method according to claim 5, ~~characterized in that wherein~~ within one horizontal scanning period, one line of samples stored in the line-memory are read out at uniform intervals.

8. (Cancelled)

9. (Original) A display device with a function of interpolating for a video signal, comprising at least one line-memory being applied with an input digital video signal, wherein the line-memory is subjected to controlling including writing and reading thereof so that a video signal subjected to horizontal interpolation is generated from reading-outputs of the line-memories, which further comprises:

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means for applying the signal subjected to horizontal interpolation to a serial input of a shift-register for applying pixel information signals associated respectively with column electrodes each extending in a vertical direction of a display area in displaying means;

means for applying a shift-clock signal to the shift-register, the shift-clock signal having a predetermined frequency for shifting data latched in the shift-register; and

means for performing writing a sequence of samples of the input digital video signal into the line-memory while sequentially reading out the samples of the written sequence in response to a read-clock signal, a frequency of the read-clock signal being set to have a constant frequency which is lower than the frequency of the shift-clock signal and which is in accordance with a desired horizontal expansion ratio.

10-11. (Cancelled)

12. (Previously Presented) A method according to claim 3, wherein a line-memory to be in a reading mode is designated based on a synchronization signal having a frequency more than by a factor of the vertical expansion ratio as high as a horizontal synchronization frequency of the input digital video signal.

13. (Previously Presented) A method according to claim 6, wherein within one horizontal scanning period, one line of samples stored in the line-memory are read out at uniform intervals.

14. (Cancelled)

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15. (Previously Presented) The display device of claim 9, wherein the line-memory is a dual-port device.

16. (New) A method according to claim 3, wherein the line-memories are FIFO type memories having a dual port.

17. (New) A method according to claim 4, wherein the line-memories are FIFO type memories having a dual port.